REMARKS/ARGUMENTS

This Amendment is submitted in response to the Office Action mailed on March 3, 2011. Claims 1 - 15 were pending. Claims 16 - 18 were withdrawn and have been cancelled, and claims 19 - 35 have been added to focus on the various features of the embodiment being claimed.

Support for the amendments to the claims and the new claims can be found in the Specification at the following locations, and others.

Claim	Location of Support
1	Paragraphs 72, 75, 124.
19	Pars. 71, 72.
20	Par. 101.
21	Pars. 101, 124, Fig. 2B,
22, 23	Pars. 101, 124 - 130, 138, 163, Fig. 2B, Fig. 4, item 61.
24	Par. 169.
25	Par. 169, Fig. 2B.
26, 28, 29	Par. 143.
27	Par. 138, Fig. 4, item 61.
30 - 34	As in claim 26 and Fig. 2B.

On page 2 of the Office Action, the Examiner suggested a new title for the application. Applicant has amended the title in accordance with the Examiner's suggestion. Applicant thanks the Examiner for his guidance in this matter.

On pages 3-5 of the Office Action, the Examiner rejected claims 1-15 under 35 U.S.C. 102(b) as being anticipated by Anderson (U.S. 4,750,258). Applicant has amended claim 1 as shown. Applicant has also added new claims 19-34. In view of the claims as now presented and for the following reasons, Applicant believes that claims 1-15 and new claims 19-34 are not anticipated by Anderson and should be allowed.

Anderson discloses an apparatus for the simultaneous, axial insertion of multiple pole, multiple phase windings into the slots of a stator of an electric motor or other dynamoelectric machine. Coil groups are placed on a circular array of fingers of an axial coil inserter, with chord segments of the coil groups extending across the circular opening of the circular array of fingers. The coil groups are arranged in pairs with each pair being angularly and axially offset with respect to one another. A stripper is axially movable within the circular array of fingers so

as to substantially simultaneously engage portions of the chord segments of the coil groups thereby to insert the coil groups into the slots of the stator. The stripper has a number of operative surfaces facing axially outwardly which are disposed circumferentially on the stripper as to be in radial register with the chord segments of their respective chord groups, with the operative surfaces being axially spaced or stepped from one another so that as the stripper is moved axially outwardly, these various operative surfaces on the stripper substantially simultaneously engage their respective chord segments to thereby substantially simultaneously insert the coil groups into the stator slots. A method of simultaneously inserting such windings is also disclosed.

Before addressing the rejection, Applicant believes the Examiner's understanding of the claimed embodiments may be enhanced by the following explanations and drawings and simplified explanation of Applicant's embodiments for the Examiner's convenience. Applicant's terminology in the claims and specification will be explained by reference to attached drawings.

The following are annotated renditions of Applicant's Figs. 2A and 2B.

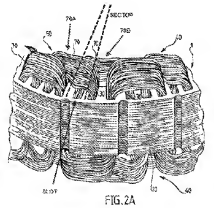


FIG. 2A

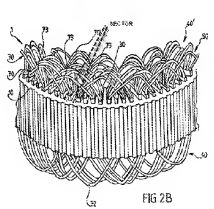
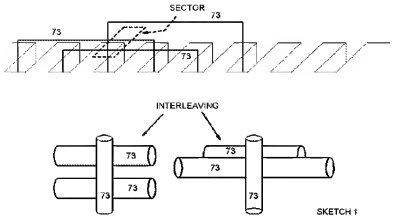


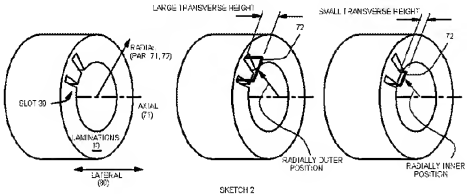
FIG 2B

The top portion of SKETCH 1 (below) is a linearized simplification of Fig. 2B, showing wires 73. A SECTOR is indicated. The partial wires 73 that are shown in the SKETCH 1 form "overhangs" claimed and described in Applicant's Specification, such as in paragraph [0075].

The bottom of SKETCH 1, shows some various ways in which wires 73 may cross within the SECTOR. This overall crossing of the wires in Fig. 2B can be termed "INTERLEAVING," as SKETCH 1 indicates.



SKETCH 2 (below) explains terms used in the specification and claims, particularly in paragraphs [0124] - [0132] of the Specification. Those terms were explained previously in the Specification, but are repeated in SKETCH 2 for the convenience of the Examiner.

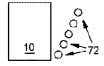


In SKETCH 2, left side, the "radial" direction is shown. Paragraphs [0071] and [0072] of the Specification refer to this, as indicated. SKETCH 2, left side, indicates the "axial" direction, as in paragraph [0071]. SKETCH 2, left side, indicates the "lateral" direction, consistent with paragraph [0080]. ("Lateral" is also called "transverse" in the Specification.)

These explanations provide a basis for the claim terminology of an "overhang" at a "radially outer position" having a "large transverse height," as in SKETCH 2, center.

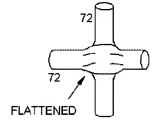
Conversely, an "overhang" at a "radially inner position" having a "small transverse height," is explained in SKETCH 2, right side.

SKETCH 3 (below) is a simplified view of a collection of multiple conductors 72 shown in SKETCH 2, center and right sides, but in cross-sectional format. SKETCH 3 illustrates how the spacing between the conductors 72 is relatively large, compared with that which would exist if the conductors were stacked vertically (or side-by-side, as shown in Applicant's Fig. 2A). This increased spacing of SKETCH 3 provides more air between the conductors 72 and, thus, better cooling.



SKETCH 3

SKETCH 4 (below) indicates two conductors crossing, as occurs in regions 61 in Fig. 4. The conductors 72 in SKETCH 4 are flattened, as indicated. This decreases the space required.



SKETCH 4

Fig. 11A (below) is an annotated rendition of Applicant's Fig. 11A. It shows one conductor 711, at the bottom, being deformed. That deformation locks the stack of conductors in place, as explained at Applicant's paragraph [0144].

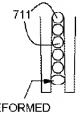


FIG 11A

For the ease of the Examiner's understanding, Applicant respectfully presents Applicant's Fig. 2B with the labeling of the sector and slot as explained in Applicant's specification.

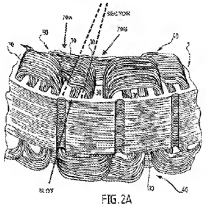


FIG. 2A

As the Examiner is aware, in an electric motor, the mechanical power which can be developed depends in part on the size of the magnetic field which can be produced. The size of the magnetic field depends on the size of the electric current which can be maintained. However, the size of the electric current is limited by the heat which can be tolerated by the motor, and the insulation of the wires is often a specific limiting factor. See "Electric Motors and Drives," Chapter 1, by Austin Hughes (Second Edition, Butterworth-Heinemann publishers, Newnes division, 2001).

The claimed embodiments provide improved cooling of wires in a motor and other features, as explained in Applicant's specification, paragraphs [0006] and [0169].

Features of the Claimed Embodiments
and Differences Over Anderson Reference

POINT 1

In Anderson, the wires are bundled. In the claimed embodiments, they are spaced apart, allowing for improved airflow. See Applicant's pending claims 1 and 22, for example.

Anderson (Figs. 2 and 8-13) show bundles designated as G1, G2, G3, etc. Note in these bundles that wires are surrounded by, and in contact with, neighboring wires. No air spaces are intentionally inserted into the bundles.

These bundles are clearly different from any corresponding wires in the various claims, such as overhangs 40, 40' recited in claim 1, for example, and shown in Applicant's Fig. 2B and covered by claim 1, which requires overhangs that are of different heights.

One difference lies in the fact that the overhangs 40, 40' (see Applicant's annotated Fig. 2B above) are spaced apart from each other. This allows air circulation. (See Applicant's paragraphs [0132] and [0169]).

POINT 2

Under the claimed embodiments, not only are the wires spaced apart, but such spacing is done so in a particular way. As shown in SKETCH 2 above, center and right side, the radially outer overhangs have a larger transverse height, compared with the radially inner overhangs. See independent claims 1 and 19.

This provides more overall space between the wires, as shown in SKETCH 3 above, compared to if the wires were stacked vertically, or stacked side-by-side. Thus, more cooling air is in contact with the wires. Anderson teaches away from this in that it requires tight bundles that are in contact. Therefore, it cannot teach of this feature.

POINT 3

In Applicant's Fig. 2B, reproduced above with annotations above, as in Anderson, bundle 70A is positioned above bundle 70B. There are two layers of bundles. Thus, a larger number of wires can occupy a given radial distance than if the wires were positioned side-by-side. The reason is that one bundle occupies one layer, and the other bundle occupies another layer. The layers do not compete with each other for radial space. ("Radial" direction is indicated in SKETCH 2 above.) This feature is recited in new independent claim 20, for example. Anderson fails to teach of this.

In contrast, various claims require that wires be positioned side-by-side, but they are flattened, to conserve space. (See SKETCH 4 above.)

POINT 4

Fig. 11A, which is reproduced above, shows one form of on embodiment of the invention. The radially innermost conductor in a slot is flattened. This locks the stack of conductors in place, as explained in the Specification at paragraph [0144]. Anderson does not show any such feature or method step.

POINT 5

Applicant points out that, as understood, Anderson is concerned primarily with the problems caused by wires which are wrapped around a mandrel. The total friction between those wires and the mandrel can make the wires difficult to slide off the mandrel. (Column 2, line 31 et seq.) Such sliding is required in order to transfer the wires to Anderson's stator.

Anderson's solution is to slide the wires off in stages, or separate groups. (Column 9, line 30 et seq.)

Applicant fails to see a discussion in Anderson of the thermal problems which Applicant's claimed embodiment addresses. Consequently, there is no teaching in Anderson which leads to the spacing and overlaps of differing heights recited in Applicant's claims, for example, nor the procedures which lead to such spacing.

CONCLUSION

As the Examiner is aware, in order to have an anticipatory reference, the reference must teach, within its four corners, each and every element of the claimed embodiment(s). Anderson fails to teach of each and every element of Applicant's claims as now presented and, therefore, cannot anticipate the claims.

The points made above are not seen taught in the Anderson reference. Consequently, the claims which contain recitations relating to those points are seen as patentable over Anderson.

For all the foregoing reasons and in view of the claims as now presented, Applicant believes that the application is now in condition for allowance and such allowance is respectfully requested.

Applicant is filing concurrently herewith a three month extension of time.

The Commissioner is hereby authorized to charge any additional fees under 37 C.F.R. 1.16 and 1.17 which may be required by this paper, or to credit any overpayment, to Deposit Account No. 50-1287. Applicant hereby provides a general request for any extension of time which may be required at any time during the prosecution of the application. The Commissioner is also authorized to charge any fees which have not been previously paid for by check and which are required during the prosecution of this application to Deposit Account No. 50-1287.

Applicant invites the Examiner to contact the undersigned via telephone with any questions or comments regarding this case.

APPLICANT RESPECTFULLY REQUESTS AN INTERVIEW WITH THE EXAMINER IF THIS AMENDMENT DOES NOT PLACE THIS CASE IN CONDITION FOR ALLOWANCE.

Reconsideration and favorable action are respectfully requested.

Respectfully submitted,

JACOX, MECKSTROTH & JENKINS

By: 

Matthew R. Jenkins
Reg. No. 34,844

2310 Far Hills Building
Dayton, OH 45419-1575
(937)298-2811

September 1, 2011

MRJ:tlf